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Claims:

1. Method for opening the nips (9, 10) of a calender comprising at least two elements (1, 2; 3, 4)
5 brought to a nip contact with each other, especially for performing the nip opening at a break or damage occurring in the web (5) being calendered, in which method the tension of the web (5) being calendered is measured at multiple points over the cross-
10 machine width of the web (5), c h a r a c t e r - i z e d in that the calender nips (9, 10) are opened when the measured web tension at a preset number of points over the cross-machine width of the web (5) has fallen to a limit value that by a
15 decision-making algorithm monitoring the tension profile of the web (5) is interpreted to indicate a web break situation or other damage on the web (5) requiring opening the nips (9, 10).
- 20 2. Method according to claim 1, c h a r a c t e r - i z e d in that
 - a reference value is set for the tension of the web (5) measured at a point over the cross-
25 machine width of the web,
 - said measured tension value of the web (5) is compared with said reference value, and
 - 30 - the calender nips (9, 10) are opened when the ratio of the areas, at which the measured tension values of the web (5) fall below a

preset reference value, as summed over the cross-machine width of the web (5), to the overall width of the web (5) exceeds a preset limit value.

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3. Method according to claim 1, c h a r a c t e r -
i z e d in that

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- a preset reference value is set for the tension of the web (5) measured at a point over the cross-machine width of the web,

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- a weighted average is computed from said measured tension values of the web (5) obtained from different points over the width of the web, and

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- the calender nips (9, 10) are opened when said weighted average of the web tension values falls below the preset reference value.

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4. Method according to claim 3, c h a r a c t e r -
i z e d in that the width of the detected area is used as the weighing factor of said weighted average.

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5. Method according to any one of foregoing claims, c h a r a c t e r i z e d in that the tension of the web (5) being calendered is measured indirectly by way of measuring the pressure of an air cushion formed between the moving web (5) and a gauging bar, which is located in a close proximity to said web (5) and has an at least partially arcuate shape in

the travel direction of said web (5), whereby the measured pressure of said air cushion is proportional to the tension of said web (5).

- 5 6. Method according to any one of foregoing claims,
c h a r a c t e r i z e d in that the web (5) being
calendered is severed with the help of an air-jet
cutting device when a decision-making algorithm
10 monitoring the tension profile of said web (5)
interprets the detected situation to be caused by a
web break or other damaged area of the web (5) that
necessitates the opening of the nips (9, 10).
- 15 7. Assembly for opening calender nips (9, 10), partic-
ularly at the occurrence of a break or damage in a
web (5) being calendered, said assembly comprising
- at least two members (1, 2; 3, 4) adapted to
20 cooperate in a nip contact so as to pass there-
between the web (5) being calendered, and
 - a gauging device (6, 7, 8) for measuring the
25 tension of the web (5) being calendered at
multiple points along the cross-machine width of
the web (5),
- 30 c h a r a c t e r i z e d in that the calender nips
(9, 10) are adapted openable when the web tension
measured at a preset number of cross-machine points
of the web (5) has fallen to a value at which a
decision-making algorithm monitoring the tension
profile of the web (5) interprets the detected

situation to be caused by a web break or other damaged area of the web (5) that necessitates the opening of the nips (9, 10).

5 8. Assembly according to claim 7, c h a r a c t e r -
i z e d in that said gauging device (6, 7) is
located at a point preceding said calender nip (9,
10) upstream in regard to the travel direction of
the web (5).

10 9. Assembly according to claim 7 or 8, c h a r a c -
t e r i z e d in that said gauging device (8) is
located at a point after said calender nip (9, 10)
downstream in regard to the travel direction of the
15 web (5).

10. Assembly according to any one of claims 7-9,
c h a r a c t e r i z e d in that said gauging
device (6, 7, 8) is a gauging bar shaped to have an
20 at least partially arcuate surface in the travel
direction of said web (5) and has pressure sensors
adapted to holes made thereon.

11. Assembly according to any one of foregoing claims,
25 c h a r a c t e r i z e d in that one of the
members (1, 2; 3, 4) forming said calender nip (9,
10) is metal-surfaced roll and the other one is
soft-coated roll.

30 12. Assembly according to any one of foregoing claims,
c h a r a c t e r i z e d by an air-jet cutting
device adapted to perform the severing of said web

(5) being calendered at the instant the decision-making algorithm monitoring interprets the situation to be a web break or a so extensively damaged area of the web (5) that requires the opening of the nips (9, 10).

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13. Assembly according to claim 12, characterized in that said air-jet cutting device is integrated with said web tension gauging bar.

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14. Method for detecting a break or damage occurring in a web (5) being calendered, in which method the machine-direction tension of the web (5) being calendered is measured at multiple points over the cross-machine width of the web (5), characterized in that a break or damage of the web (5) is indicated when the measured web tension at a preset number of points over the cross-machine width of the web (5) has fallen to a limit value that by a decision-making algorithm monitoring the tension profile of the web (5) is interpreted to indicate a web break situation or other damage on the web (5) requiring opening the nips (9, 10).

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